

**IN THE CLAIMS:**

1           1.     A short-range wireless access point enabling a mobile wireless device to resume  
2     service with a network server after the wireless device moves out of the coverage area of the of  
3     the access point, comprising:

4           a)     a server including transceivers for short-range wireless communication within a  
5     coverage area and with a network server;

6           b)     a mobile device coupled to the server via a short-range communication link;

7           c)     means registering the mobile device when initiating proximity services with a  
8     service provider;

9           d)     means transmitting a code to the mobile device for identification purposes in  
10    short-range and network communications;

11          e)     means initiating a session for the mobile device with the service provider when  
12    within the coverage area; and

13          f)     means maintaining the session with the service provider when the mobile device  
14    moves outside the coverage area.

1           2.     The short-range wireless access point of claim 1 further comprising:

2           g)     means for transferring the session to the network server when the mobile device  
3     moves outside the coverage area.

1           3.     The short-range wireless access point of claim 1 further comprising:

2           h)     means providing the access point with a first and a second identification of the  
3     mobile device.

1           4.     The short-range wireless access point of claim 1 further comprising:

2           i)     means coupling the access point to the service provider via an information  
3     network.

1           5.     The short-range wireless access point of claim 3 further comprising:  
2           j)     means coupling the first and second identifications in a hashed code as proximity  
3 identification of the mobile device.

1           6.     The short-range wireless access point of claim 3 further comprising:  
2           k)     means transmitting a message to the mobile device including the hashed code and  
3 instructing the mobile device to forward the message to the server for associating the first  
4 identification with the second identification in subsequent request for service by the mobile  
5 device.

1           7.     The short-range wireless access point of claim 1 further comprising:  
2           l)     a service provider incorporated within the access point; and  
3           m)     means enabling the access point to contact the mobile device and provide services  
4 via the short-range communication link when the mobile device is within the coverage area or  
5 through a cellular network if the mobile device is outside the coverage area.

1           8.     The short-range wireless access point of claim 3 wherein the first identification is  
2 a MAC address and the second identification is a machine number for the mobile device.

1           9.     The short-range wireless access point of claim 1 wherein the short-range  
2 communication link implements Bluetooth protocols.

1           10.    The short-range wireless access point of claim 1 wherein the network server  
2 implements cellular protocols.

1           11.    The short-range wireless access point of claim 4 wherein the information network  
2 is the Internet.

1           12.    A method in a short-range wireless access point for enabling a mobile device to  
2 resume service with a network server, the service having been interrupted by moving the mobile  
3 device out of the coverage area of the access point, comprising;

4           a)     establishing a short-range communication link for initiating a service with the  
5 mobile wireless device, wherein the short-range communication link is based on a local area  
6 identification the mobile wireless device;

7           b)     requesting from the mobile wireless device an additional identification through  
8 the short-range communication link, wherein the requested identification relates to a wide area  
9 network identification of the terminal;

10          c)     receiving the additional identification from the mobile wireless device;

11          d)     determining whether the service with the mobile wireless device through the  
12 short-range communication link is open; and

13          e)     establishing wide area connection with the mobile wireless device using the  
14 stored association in response to detecting that the short-range communication link is closed.

1           13.    The method of claim 12 further comprising:

2           f)     providing the access point with a first and a second identification of the mobile  
3 device.

1           14.    The method of claim 12 further comprising:

2           g)     coupling the access point to the service provider via an information network

1           15.    The method of claim 12 further comprising:  
2                   h)     coupling the first and second identifications in a hashed code as proximity  
3 identification of the mobile device.

1           16.    The method of claim 15 further comprising:  
2                   i)     transmitting a message to the mobile device including the hashed code and  
3 instructing the mobile device to forward the message to the server for associating the first  
4 identification with the second identification in subsequent request for service by the mobile  
5 device.

1           17.    The method of claim 12 further comprising:  
2                   j)     incorporating a service provider within the access point; and  
3                   k     enabling the access point to contact the mobile device and provide services via the  
4 short-range communication link when the mobile device is within the coverage area or through a  
5 cellular network if the mobile device is outside the coverage area.

1           18.    The method of claim 13 wherein the first identification is a MAC address and  
2 the second identification is a machine number for the mobile device.

1           19.    The method of claim 12 wherein the short-range communication link  
2 implements Bluetooth protocols.

1           20.    The method of claim 12 wherein a network server implements cellular protocols  
2 in establishing a wide area connection.

1           21.    The method of claim 14 wherein the information network is the Internet.

1           22.    A system enabling a mobile wireless device to resume service with a network  
2 server after the wireless device moves out of a coverage area of an access point, comprising:  
3           a)     a hotspot server including transceivers for short-range wireless communication  
4 within a coverage area and with a network server;  
5           b)     a mobile device including means for short-range communication and network  
6 communications;  
7           c)     means coupling the hotspot server to a service provider;  
8           c)     means stored in the mobile device for implementing short-range communications  
9 with the hotspot server when within the coverage area;  
10          d)     means stored in the hotspot server for recognizing the mobile device when  
11 initiating short-range communication with the mobile device  
12          e)     means registering the mobile device when initiating proximity services with the  
13 service provider;  
14          f)     means transmitting a code to the mobile device for identification purposes in  
15 short-range and network communications;  
16          g)     means initiating a session for the mobile device with the service provider within  
17 the coverage area; and  
18          h)     means maintaining the session with the service provider using the code when the  
19 mobile device moves outside the coverage area.

1           23.    The system of claim 22 further comprising:  
2           i)     means coupling a MAC address and a cellular address number of the mobile  
3 device in a code as an identifier of a subscriber of proximity services.

1           24.    The system of claim 22 wherein the hotspot server is coupled to a backend server.

1           25.    The system of claim 22 wherein a service provider is incorporated within the  
2   hotspot server and the server selects a first communication protocol to link with the mobile  
3   device when the mobile device is within the coverage area and a second communication protocol  
4   as a smooth handover when the mobile device leaves the coverage area.

1           26.    The system of claim 22 wherein the service provider continues a consumer  
2   relation with the mobile device while out of the coverage area using the cellular address number.  
3   of the device.

1           27.    The system of 22 wherein the services provider services are SMS/MMS based.

1           28.    The system of claim 22 wherein the service provider provides tailored services to  
2   a mobile device.

1           29.    The system of claim 22 wherein the access point tracks and calculates services  
2   used by a mobile device within a billing zone and sends the billing data to the mobile device in a  
3   SMS message.

1           30.    The system of claim 22. wherein the service provider services are browser/J2ME  
2   based.

1           31.    A method enabling a mobile wireless device to resume service with a network  
2   server after the wireless device moves out of a coverage area of an access point, comprising:

3           a)     installing transceivers in a hotspot server for short-range wireless communication  
4   within a coverage area and with a network server;

5           b)     installing short-range communication and network communications means in a  
6   mobile device;

7           c)     coupling the hotspot server to a service provider;

- 8           c)     storing in the mobile device means for implementing short-range  
9 communications with the hotspot server when within the coverage area;
- 10          d)     storing in the hotspot server means for recognizing the mobile device when  
11 initiating short-range communication with the mobile device
- 12          e)     registering the mobile device when initiating proximity services with the service  
13 provider;
- 14          f)     transmitting a code to the mobile device for identification purposes in short-range  
15 and network communications;
- 16          g)     initiating a session for the mobile device with the service provider when within  
17 the coverage area; and
- 18          h)     maintaining the session with the service provider using the code when the mobile  
19 device moves outside the coverage area.

1           32.    The method of claim 31 further comprising:

- 2                  i)     coupling a MAC address and a cellular address number of the mobile  
3 device in the code as an identifier of a subscriber of proximity services.

1           33.    The method of claim 31 wherein the hotspot server is coupled to a backend  
2 server.

1           34.    The method of claim 31 wherein a service provider is incorporated within the  
2 hotspot server and the server selects a first communication protocol to link with the mobile  
3 device when the mobile device is within the coverage area and a second communication protocol  
4 as a smooth handover when the mobile device leaves the coverage area.

1           35.    The method of claim 31 wherein the service provider continues a consumer  
2 relation with the mobile device while out of the coverage area using the cellular address number  
3 of the device.

1           36.    The method of 31 wherein the services provider services are SMS/MMS based.

1           37.    The method of claim 31 wherein the service provider provides tailored services to  
2 a mobile device.

1           38.    The method of claim 31 wherein the access point tracks and calculates services  
2 used by a mobile device within a billing zone and sends the billing data to the mobile device in a  
3 SMS message.

1           39.    The method of claim 31. wherein the service provider services are browser/J2ME  
2 based.